King County
Department of Permitting and Environmental Review
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206-296-6600
TTY Relay: 711

2012 Washington State Energy Code / IECC

2012

Unincorporated King County RESIDENTIAL CONSTRUCTION ENERGY COMPLIANCE FORM

Interactive form available at www.kingcounty.gov/property/permits/publications.aspx

Applicant's name _____ K.C. tracking no. _____

select applicable item from options given or fill in blank New Conditioned sq. ft.= _____

Job type:	New Building ☐	Addition ☐	Remodel ☐	Total number of bedrooms in building: _____		
Occupancy:	Single Family ☐	Accessory Bldg ☐	Duplex ☐			
Heating fuel:	Gas / Oil ☐	Electric ☐	Propane ☐	Other: _____		
Heating system:	Forced Air ☐	Room Heaters ☐	Radiant ☐	Hydronic ☐		
	Heat Pump ☐	Existing System ☐	Other: _____			

Location of Heating Equipment _____ Size (pg.4) _____ Btuh / KW

choose option of compliance: **< PLANS MUST REFLECT ALL OPTIONS CHOSEN >**

☐ Prescriptive compliance: Zone 4 Marine (wood-framed buildings) R402.1.1

NOTE: Energy credit (EC) options may affect element values	Openings[a] U-Values		Ceiling Insulation		Walls[a]	Below Grade Walls[c]			
	% floor area	Vertical	Overhead	attic	vaulted[b]	Above Grade	interior	exterior	Floors	Slab on grade
	Unlimited	0.30	0.50	R-49 or R-38 ADV	R-38	R-21 Int.	R-21 Int. w/ thermal break	R-10	R-30	R-10
	EC option 1a	*0.28*	*0.50*	*"*	*"*	*"*	*"*	*"*	*R-38*	*R-10 Full*
	EC option 1b	*0.25*	*0.50*	*"*	*"*	*R21+R4ci*	*R21+R5ci*	*"*	*R-38*	*R-10 Full*
	EC option 1c	*0.22*	*0.50*	*R-49 ADV*	*R-49*	*R21+R12ci*	*R21+R12ci*	*"*	*R-38*	*R-10 Full*

footnote a *openings includes all windows and doors. Intermediate framing requires headers to be insulated.*
footnote b *applicable only to single joist or rafter cavity, not scissor trusses*
footnote c *R-21 equivalent may be R-15 interior rigid continuous insulation (ci),OR R-13 batt interior with R-5 rigid continuous insulation (ci).*

☐ U-Factor / Total UA Equivalent compliance (complete sheets 3 and 4 for compliance)

	Openings	U-value		Ceiling Insulation		Walls	Below Grade Walls			
	% floor area	Vertical	Overhead	attic	vaulted	Above Grade	interior	exterior	Floors	Slab on grade
Target Values	15%	0.300	0.50	0.026	0.026	0.056	0.042	0.064	0.029	0.54
Proposed Values										

WHOLE HOUSE VENTILATION SYSTEMS

Check the "whole house ventilation system" that will be used

- ☐ whole house ventilation using exhaust fans (FORM # VIAQ 2): IMC Section 403.8.6
- ☐ whole house ventilation integrated with a forced-air system (FORM # VIAQ 3): IMC Section 403.8.7
- ☐ whole house ventilation using a supply fan (FORM # VIAQ 4) IMC Section 403.8.8
- ☐ whole house ventilation using a heat recovery ventilation system (FORM # VIAQ 5): IMC Section 403.8.9
- ☐ Engineered "whole house ventilation system" designed in compliance with IMC Section 403.8.10

LOCATION OF WHOLE HOUSE FAN _____ **SIZE:** _____ **cfm**

☐ *check box if* fan is connected to 24-hr timer to operate _____ hrs / day (see pg. 5)
(if box not checked, fan specified to run continuously) Fan sone ≤ 1.0 or inline 4 ft from inlet.

AIR LEAKAGE

Components of the building thermal envelope as listed in TABLE R402.4.1.1 (pg. 7) shall be installed per manufacturer's specifications to limit air leakage rate to not exceed **5 air changes per hour** (ACH)

Blower door test @50 Pa max. rate:(Bldg Vol (ft^3)x 5 ACH) / 60 min.= _____ cfm *Energy Credit Options 2 limits max ACH*

Residential Construction Energy Compliance: King County

ENERGY CREDIT OPTION DESCRIPTIONS: *Choose option(s) for total points equal to minimum required for building size:* **Addtn sq.ft.< 750 or Bldg sq.ft.< 1500= 0.5 pt.; sq.ft.> 5000= 2.5 pts.; all others= 1.5 pts.**

☐ **1a** (0.5 pt)	**Efficient Building Envelope 1a**: Table R402.1.1 Prescriptive compliance with openings U = 0.28, floor R-38, slabs R-10 perimeter and under entire slab, **OR** Total UA Equivalent compliance Target UA reduced by 5% (0.5 pt)
☐ **1b** (1.0 pt)	**Efficient Building Envelope 1b:** Table R402.1.1 Prescriptive compliance with openings U = 0.25, wall R-21 plus R-4, floor R-38, slabs R-10 perimeter and under entire slab with below grade walls R-21 plus R-5 c.i., **OR** Total UA Equivalent compliance with Target UA reduced by 15%. (1.0 pt)
☐ **1c** (2.0 pts)	**Efficient Building Envelope 1c:** Table R402.1.1 Prescriptive compliance with openings U = 0.22, walls R-21 plus R-12 c.i., floor R-38, slabs R-10 perimeter and under entire slab, and R-49 advanced frame ceilings and vaulted areas, **OR** Total UA Equivalent compliance with Target UA reduced by 30%. (2.0 pts)
☐ **2a** (0.5 pt)	**Air leakage Control and Efficient Ventilation 2a:** Compliance per R402.4.1.2: Envelope leakage reduced to maximum **4.0 ACH**. Whole house ventilation requirements met by **heat recovery system per M1507.3** with high efficiency fan not interlocked with furnace ventilation system. (0.5 pt)
☐ **2b** (1.0 pt)	**Air leakage Control and Efficient Ventilation 2b:** Compliance per R402.4.1.2: Envelope leakage reduced to maximum **2.0 ACH**. Whole house ventilation requirements met by **heat recovery system per M1507.3** with minimum sensible heat recovery efficiency of 0.70. (1.0 pt)
☐ **2c** (1.5 pts)	**Air leakage Control and Efficient Ventilation2c:** Compliance per R402.4.1.2: Envelope leakage reduced to maximum **1.5 ACH**. Whole house ventilation requirements met by **heat recovery system per M1507.3** with minimum sensible heat recovery efficiency of 0.85. (1.5 pts)
☐ **3a** (0.5 pt)	**High Efficiency HVAC Equipment 3a:** Gas, propane, or oil-fired furnace or boiler with minimum AFUE of 95% Plans shall specify heating equipment type, size, and minimum efficiency. (0.5 pt)
☐ **3b** (1.0 pt)	**High Efficiency HVAC Equipment 3b:** Air-source **heat pump** with minimum HSPF of 8.5. Plans shall specify heating equipment type, size, and minimum efficiency. (1.0 pt)
☐ **3c** (2.0 pts)	**High Efficiency HVAC Equipment 3c:** Closed-loop ground source **heat pump** with minmum COP of 3.3 OR open-loop water source heat pump with COP of 3.6. Plans shall specify heating equipment type, size, and minimum efficiency. (2.0 pts)
☐ **3d** (1.0 pt)	**High Efficiency HVAC Equipment 3d:** Where primary space heating system is **zonal electric heating**, a ductless heat pump system shall be installed to provide heating to at least one zone. (1.0 pt)
☐ **4** (1.0 pt)	**High Efficiency HVAC Distribution:** All heating and cooling components installed inside conditioned space. All combustion equipment shall be direct vent or sealed combustion. No system components installed in crawlspace. **No electric resistance heat permitted.** Direct combustion heating equipment with AFUE >80%. **Plans shall show equipment type and location of all equipment and ductwork.** (1.0 pt)
☐ **5a** (0.5 pt)	**Efficient Water Heating 5a:** Water heating system shall include one of the following: gas, propane or oil water heater with minimum EF of 0.62 or electric water heater with minimum EF of 0.93 **AND** for both cases all showerheads and kitchen sink faucets shall be rated at 1.75 gpm or less, all others at 1.0 gpm or less when tested in accordance with ASME A112.18.1/CSA B125.1. (0.5 pt)
☐ **5b** (1.5 pts)	**Efficient Water Heating 5b:** Water heating system shall include one of the following: gas, propane or oil water heater with minimum EF of 0.82; **OR** solar water heating supplementing minimum standard water heater. Solar water heating will provide rated minimum savings of 85 therms or 2000 kWh bsed on Solar rating and Certification Corp (SRCC) Annual Performance of OG-300 Sertified Solar Water Heating Systems; **OR** Electric heat pump water heater with EF > 2.0. **OR** Water heated by ground source heat pump with COP >3.3 (1.5 pts)
☐ **6** (0.5 - 3 pts)	**Renewable Electric Energy:** for each 1200 kWh of electrical generation provided annually by on-site wind or solar equipment a 0.5 credit shall be allowed, up to 3 credits. Generation shall be calculated as follows:
	= **Solar electric systems**: design shall be demonstrated to meet requirement using the National Renewable Energy laboratory calculator PVWATTs. Solar access documentation to be included.
	= **Wind generation projects**: design shall document annual power generation based on the following factors: wind turbine power curve, average annual wind speed at the site, frequency distribution of the wind speed at the site and the height of the tower.

Residential Construction Energy Compliance: King County

OPENINGS: Door and Glazing Summary

	size (WxH)	Area (sq.ft.)	U-Value	UA-value		Quantity	Area (sq.ft.)	U-Value	UA-value
Entry door					Basement windows				
other doors					1st floor windows				
other doors					2nd floor windows				
other doors					3rd floor windows				
TOTALS:					TOTALS:				
Skylights					% openings = Area / floor area				%

Complete Opening Schedule if using weighted average U-value for openings Or Component Performance.

Door and Glazing Opening Schedule

Location or Type of opening	Opening size		Indiv Area (sq.ft.)	U-Value	Qty.	Combined Area	UA value
	width	height					

Provide separate sheet(s) if necessary

	Qty.	Combined Area	UA value
total quantity, area, and UA values from additional sheets =			
TOTALS			

Average: UA / A = U-Value = ______

% Total Glazing = Glazing Area / Floor Area = ______ = ______ %

Residential Construction Energy Compliance: King County

Building heat loss calculations / U-Factor Equivalent compliance

Use common U-Values from Appendix A in WAC chapter 51-11C (listed on pg 6) or ASHRAE *Handbook of Fundamentals*

	Framing type? Adv / Std / Int	Insulation value*	average U-Value*	PROPOSED Area	PROPOSED UA		CODE ALLOWABLE U-Value	CODE ALLOWABLE Area	CODE ALLOWABLE UA
Attic Area							0.026		
Vaulted Ceiling							0.026		
Glazing Area						15% flr area	0.300		
Skylights						actual area	0.500		
Door Area							0.300	40.00	
Above Grade Walls							0.056		
Floor Area							0.029		
Slab on-Grade (length)				ft.			0.540	ft.	
Below Grade Walls (0-2 ft)							0.045		
Slab 2-3.5 ft length	f value=			ft.			0.610	ft.	
Below Grade Walls (2-3.5 ft)							0.042		
Slab 3.5-7 ft length	f value=			ft.			0.570	ft.	
Below Grade Walls (3.5-7 ft)							0.038		
Slab >7 ft length	f value=			ft.			0.430	ft.	
Below Grade Walls (>7 ft)							0.038		
Mulltiple slab / below grade walls									
			Total				Total		

*(provide additional sheets to document calculation of average U-value if multiple framing configurations)

NOTE : Energy Credit Options 1 require adjustment to Code Allowable UA value:

- ☐ *option 1a: reduce 5%*
- ☐ *option 1b: reduce 15%*
- ☐ *option 1c: reduce 30%*

Residential Heating System Sizing Estimation

Heating and cooling systems for residential projects shall be sized in accordance with ACCA Manual S or equiv.

Indoor Design Temperature: 70

Outdoor Design Temp (Township and Range): _____ City: _____

Design Temperature Difference = _____ (Use 22 for Design default if outdoor design temperature is not known)

(Indoor - Outdoor Design Temp) (recommended outdoor design temperatures shown on page 5)

Conditioned Floor Area (ft^2) = _____ Average floor height = _____ ft.

Conditioned Volume (floor area X average floor height) = _____

Sum of UA (heat loss of bldg) _____

	other fuels		electric	
Envelope Heat Load				
Sum of UA X Design Temperature Difference =		Btu / Hour		KW
Air Leakage Heat Load	***Convert Btu / hr to electric KW: Btu ÷ 3413***			
CV X 0.6 X Design Temperature Difference X .018 =		Btu / Hour		KW
Building Design Heat Load				
Air Leakage + Envelope Heat Load =		Btu / Hour		KW
Building and Duct Heat Load				
Building Design Heat Load x 1.15 or 1.0 ( )=		Btu / Hour		KW

Use 1.15 if ducts are located in unconditioned space: Building Design Heat Load X 1.15

Use 1.0 if ducts are located in conditioned space: Building Design Heat Load X 1.0

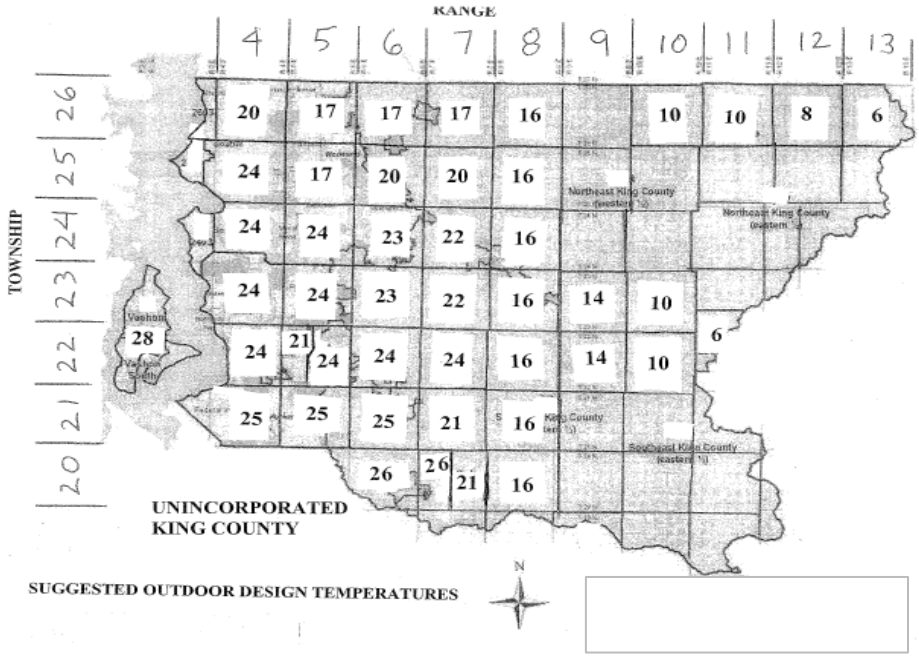
Maximum Heating Equipment Output

Use Building and Duct Heat Load X 1.40 for Forced Air Furnace =		Btu / Hour		KW
Use Building and Duct Heat Load X 1.25 for Heat Pump system =				

Actual heat sizing calculation to be supplied by mechanical contractor at time of equipment installation.

Residential Construction Energy Compliance: King County

Recommended Outdoor Design Temperatures



VENTILATION AND INDOOR AIR QUALITY REQUIREMENTS

Whole House Ventilation fan(s) shall be sized according to International Residential Code section M1507.3.3.

* Continuously operating exhaust ventilation systems shall provide minimum flows per Table M1507.3.3(1).
* Intermittently operating ventilation systems shall have the minimum flows from Table M1507.3.3(1) adjusted by the ventilation rate multiplier value in Table M1507.3.3(2) according to the formula $Q_f = Q_r \times E_f$

2012 International Residential Code Table M1507.3.3(1) (continuously operating systems)

MINIMUM VENTILATION RATES FOR DWELLINGS FOUR STORIES OR LESS, Q_r

	Number of Bedrooms								
Floor Area (sq.ft.)	0	1	2	3	4	5	6	7	>7
0 1500	30	30	45	45	60	60	75	75	90
1501 to 3000	45	45	60	60	75	75	90	90	105
3001 to 4500	60	60	75	75	90	90	105	105	120
4501 to 6000	75	75	90	90	105	105	120	120	135
6001 to 7500	90	90	105	105	120	120	135	135	150
> 7501	105	105	120	120	135	135	150	150	165

2012 International Residential Code Table M1507.3.3(2)

	INTERMITTENT WHOLE-HOUSE VENTILATION RATE FACTORS (E_f)			Specified Fan
enter "x" for time ON	Run-time % in each 4-hour segment	Rate Multiplier Factor	Min. Fan Size cfm	cfm
☐	25% (1 hr every 4 hrs; 6 hrs / day)	4		
☐	33% (1 hr 20 min every 4 hrs; 8 hrs / day)	3		
☐	50% (2 hrs every 4 hrs; 12 hrs / day)	2		
☐	66% (2 hrs 40 min every 4 hrs; 16 hrs / day)	1.5		
☐	75% (3 hrs every 4 hrs; 18 hrs / day)	1.3		
☐	100% (continuously operating)	1.0		

Residential Construction Energy Compliance: King County

Common U-Values for various framed elements

CEILINGS		FRAMING		
TYPE	Insulation	Standard	Intermed.	Advanced
Flat	R-19	0.049		0.047
	R-30	0.036		0.032
	R-38	0.031		0.026
	R-49	0.027		0.020
	R-60	0.025		0.017
Scissor truss				
4:12 pitch	R-30	0.043		0.031
4:12 pitch	R-38	0.040		0.025
4:12 pitch	R-49	0.030		0.020
5:12 pitch	R-30	0.039		0.032
5:12 pitch	R-38	0.035		0.026
5:12 pitch	R-49	0.032		0.020
Vaulted		16" OC	24" OC	
vented 2x10	R-19	0.049	0.048	
vented 2x12	R-30	0.034	0.033	
vented 2x14	R-38	0.027	0.027	
unvented 2x10	R-30	0.034	0.033	
unvented 2x12	R-38	0.029	0.027	

FLOORS		
Insulation	Post & Beam	Joists
R-0	0.112	0.134
R-11	0.052	0.056
R-19	0.038	0.041
R-22	0.034	0.037
R-25	0.032	0.034
R-30	0.028	0.029
R-38	0.024	0.025

SLAB on GRADE			
UNHEATED SLAB		UNHEATED SLAB	
uninsulated	0.73	R-10 fully insulated	0.36
all 2 ft horiz w/o tb*	0.70	R-15 fully insulated	0.31
R-5 2-ft vert/horiz	0.58	R-20 fully insulated	0.26
R-10 2-ft vert/horiz	0.54	HEATED SLAB	
R-15 2-ft vert/horiz	0.52	R0 uninsulated	0.84
R-5 4-ft vert/horiz	0.54	R5 fully insulated	0.74
R-10 4-ft vert/horiz	0.48	R10 fully insulated	0.55
R-15 4-ft vert/horiz	0.45	R15 fully insulated	0.44
		R20 fully insulated	0.39
		R30 fully insulated	0.32

WALLS		FRAMING		
	Insulation	Standard	Intermed.	Advanced
Lapped Wood Siding				
2 x 4 WOOD	R-11	0.088		0.084
	R-13	0.082		0.078
	R-15	0.076		0.071
2 x 6 WOOD	R-19	0.062	0.058	0.055
	R-21	0.057	0.054	0.051
	R-22	0.059	0.055	0.052
	(2) R-11	0.060	0.057	0.054
2 x 8 WOOD	R-25	0.051	0.047	0.045
		FRAMING		
T1-11 Siding		Standard	Intermed.	Advanced
2 x 4 WOOD	R-11	0.094		0.09
	R-13	0.088		0.083
	R-15	0.081		0.075
2 x 6 WOOD	R-19	0.065	0.061	0.058
	R-21	0.06	0.056	0.053
	R-22	0.062	0.058	0.054
	(2) R-11	0.063	0.059	0.056
2 x 8 WOOD	R-25	0.053	0.049	0.046

BELOW GRADE WALLS			Slab
	depth	U-value	F-factor
2 ft below grade	uninsulated	0.350	0.59
	R-11 interior	0.066	0.68
	R-11 interior w/tb*	0.070	0.60
	R-19 interior	0.043	0.69
	R-19 interior w/tb*	0.045	0.61
	R-10 exterior	0.070	0.60
	R-12 exterior	0.061	0.60
3.5 ft below grade	uninsulated	0.278	0.53
	R-11 interior	0.062	0.63
	R-11 interior w/tb*	0.064	0.57
	R-19 interior	0.041	0.64
	R-19 interior w/tb*	0.042	0.57
	R-10 exterior	0.064	0.57
	R-12 exterior	0.057	0.57
7 ft below grade	uninsulated	0.193	0.46
	R-11 interior	0.054	0.56
	R-11 interior w/tb*	0.056	0.42
	R-19 interior	0.037	0.57
	R-19 interior w/tb*	0.038	0.43
	R-10 exterior	0.056	0.42
	R-12 exterior	0.050	0.42

** w/tb = with thermal break*

METAL STUDS		16" OC	24" OC
4-inch	R-11	0.132	0.116
4-inch	R-13	0.124	0.108
4-inch	R-15	0.118	0.102
6-inch	R-19	0.109	0.094
6-inch	R-21	0.106	0.090
8-inch	R-25	0.08	0.091

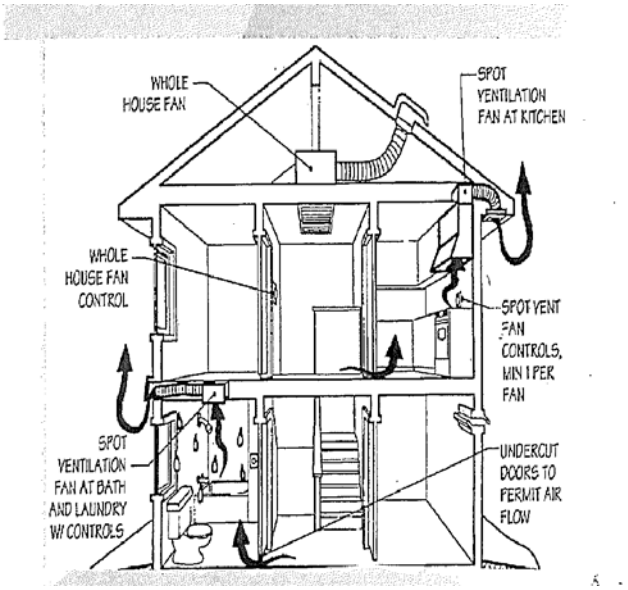
LOG WALLS		R-1.25/ inch
(average	6"	0.148
log	8"	0.111
diameter)	10"	0.089
	12"	0.074
	14"	0.063
	16"	0.056

Residential Construction Energy Compliance: King County

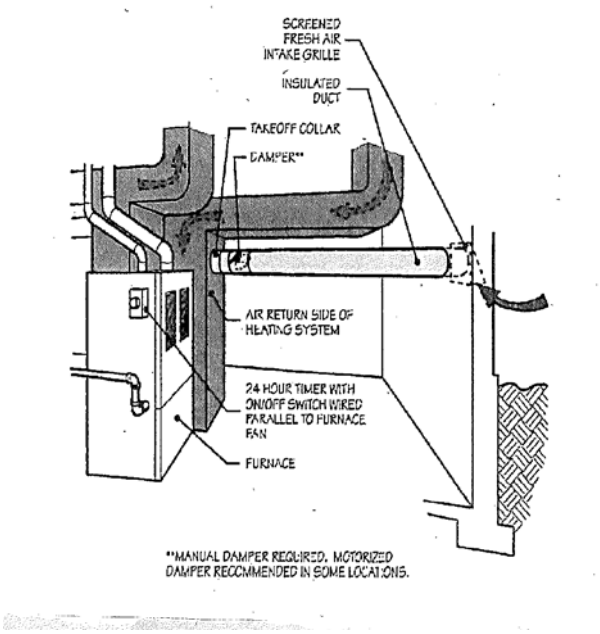
AIR BARRIER AND INSULATION INSTALLATION TABLE R402.4.1.1

COMPONENT	CRITERIA[a]
Air barrier and thermal barrier	A continuous air barrier shall be installed in the building envelope. Exterior thermal envelope contains a continuous air barrier. Breaks or joints in the air barrier shall be sealed. Air-permeable insulation shall not be used as a sealing material.
Cavity insulation installation	All cavities in the thermal envelope shall be filled with insulation. The density of the insulation shall be at the manufacturers' product recommendation and said density shall be maintained for all volume of each cavity. Batt type insulation will show no voids or gaps and maintain an even density for the entire cavity. Batt insulation shall be installed in the recommended cavity depth. Where an obstruction in the cavity due to services, blocking, bracing or other obstruction exists, the batt product will be cut to fit the remaining depth of the cavity. Where the batt is cut around obstructions, loose fill insulation shall be placed to fill any surface or concealed voids, and at the manufacturers' specified density. Where faced batt is used, the installation tabs must be stapled to the face of the stud. There shall be no compression to the batt at the edges of the cavity due to inset stapling installation tabs. Insulation that upon installation readily conforms to available space shall be installed filling the entire cavity and within the manufacturers' density recommendation.
Ceiling/attic	Ceiling/attic The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier sealed. Access openings, drop down stair or knee wall doors to unconditioned attic spaces shall be sealed. Batt insulation installed in attic roof assemblies may be compressed at exterior wall lines to allow for required attic ventilation.
Walls, Windows, skylights and doors	Corners and headers shall be insulated and the junction of the foundation and sill plate shall be sealed. The junction of the top plate and top of exterior walls shall be sealed. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier. Knee walls shall be sealed. The space between window/door jambs and framing and skylights and framing shall be sealed.
Rim joists	Rim joists shall be insulated and include the air barrier.
Floors (including above-garage and cantilevered)	Insulation shall be installed to maintain permanent contact with underside of subfloor decking. The air barrier shall be installed at any exposed edge of insulation.
Crawl space walls	Where provided in lieu of floor insulation, insulation shall be permanently attached to the crawlspace walls. Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.
Narrow cavities	Batts in narrow cavities shall be cut to fit and installed to the correct density without any voids or gaps or compression. Narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity space.
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be air tight, IC rated, and sealed to the drywall.
Plumbing and wiring	Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls. There shall be no voids or gaps or compression where cut to fit. Insulation that readily conforms to available space shall extend behind piping and wiring.
Shower and/or tub	Exterior walls adjacent to showers or tubs shall be insulated and air barrier installed separating showers and tubs from wall.
Electrical/phone box	Air barrier shall be installed behind electrical or communication boxes on exterior wall or air sealed boxes shall be installed.
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the subfloor or drywall.
Fireplace	An air barrier shall be installed on fireplace walls. Fireplaces shall have gasketed doors.

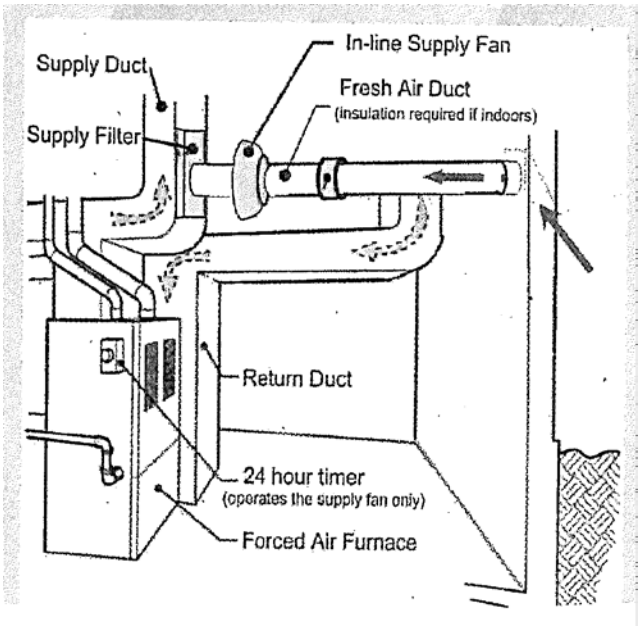
footnote a *In addition, inspection of log walls shall be in accordance with the provisions of ICC-400.*



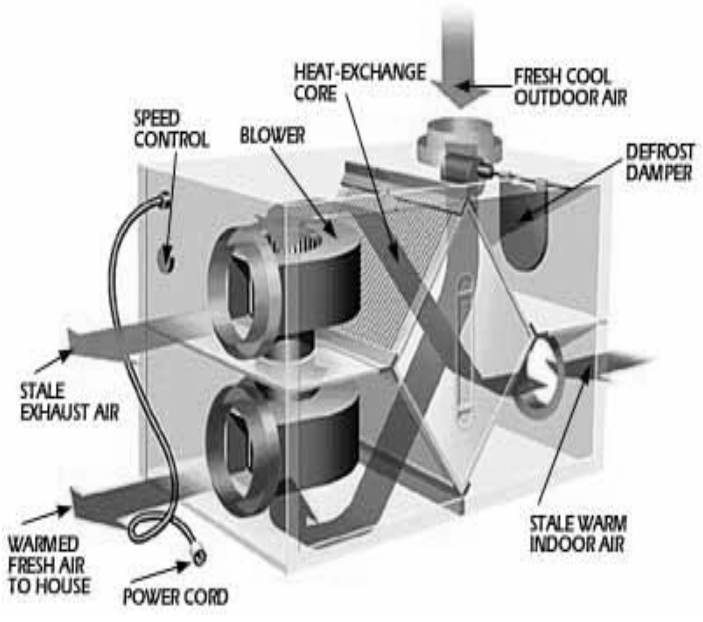
VIAQ #2 VENTILATION SYSTEM USING EXHAUST FAN(S)



VIAQ #3 VENTILATION SYSTEM USING INTEGRATED SYSTEM



VIAQ #4 VENTILATION SYSTEM USING SUPPLY FAN



VIAQ #5 VENTILATION SYSTEM USING HEAT RECOVERY SYSTEM

Energy Code Support

WASHINGTON STATE UNIVERSITY EXTENSION ENERGY PROGRAM

Duct Leakage Affidavit (New Construction)

Permit #: _____

House address or lot number: _____

City: _____ Zip: _____

Cond. Floor Area (ft^2): _____ Source (circle one): Plans Estimated Measured

☐ Duct tightness testing is not required. The total leakage test is not required for ducts and air handlers located entirely within the building thermal envelope. Ducts located in crawl spaces do not qualify for this exception.

Air Handler in conditioned space? ☐ yes ☐ no Air Handler present during test? ☐ yes ☐ no

Circle Test Method: Leakage to Outside Total Leakage

Maximum duct leakage:

Post Construction, total duct leakage: (floor area x .04) = _____CFM@25 Pa

Post Construction, leakage to outdoors: (floor area x .04) = _____CFM@25 Pa

Rough-In, total duct leakage with air handler installed: (floor area x .04) = _____CFM@25 Pa

Rough-In, total duct leakage with air handler not installed: (floor area x .03) = _____CFM@25 Pa

Test Result: _____CFM@25Pa

Ring (circle one if applicable): Open 1 2 3

Duct Tester Location: _____ Pressure Tap Location: _____

I certify that these duct leakage rates are accurate and determined using standard duct testing protocol.

Company Name: _____ Technician: _____

Technician Signature: _____

Date: _____

Phone Number: _____

Energy Code Support

WASHINGTON STATE UNIVERSITY EXTENSION ENERGY PROGRAM

Duct Leakage Test Results (Existing Construction)

Permit #: _____

House address or lot number: _____

City: _____ Zip: _____

Cond. Floor Area (ft^2): _____

☐ Duct tightness testing is not required for this residence per exceptions listed at the end of this document

Test Result: _____CFM@25Pa

Ring (circle one): Open 1 2 3

Duct Tester Location: _____

Pressure Tap Location: _____

I certify that these duct leakage rates are accurate and determined using standard duct testing protocol

Company Name: _____

Duct Testing Technician: _____

Technician Signature: _____ Date: _____

Phone Number: _____

Washington State Energy Code Reference:

R101.4.3.1 Mechanical Systems: When a space-conditioning system is altered by the installation or replacement of space-conditioning equipment (including replacement of the air handler, outdoor condensing unit of a split system air conditioner or heat pump, cooling or heating coil, or the furnace heat exchanger), the duct system that is connected to the new or replacement space-conditioning equipment shall be tested as specified in RS-33. The test results shall be provided to the building official and the homeowner.

Exceptions:

1. Duct systems that are documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in RS-33.
2. Ducts with less than 40 linear feet in unconditioned spaces.
3. Existing duct systems constructed, insulated or sealed with asbestos.
4. Additions of less than 750 square feet.